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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/675,886	09/30/2003	Christian Leth Petersen	00900.0302-US-C1	6811

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EXAMINER

KOBERT, RUSSELL MARC

ART UNIT	PAPER NUMBER
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2829

DATE MAILED: 11/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/675,886

Applicant(s)

PETERSEN ET AL.

Examiner

Russell M. Kobert

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 September 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 65,66,69,70,72-83,87-91 and 94-130 is/are pending in the application.
- 4a) Of the above claim(s) 122-130 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 65,66,69,70,72-83,87-91 and 96-121 is/are rejected.
- 7) ☒ Claim(s) 94 and 95 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>0905</u> | 6) <input type="checkbox"/> Other: _____ |

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1. Applicant's arguments with respect to claims 65, 66, 69, 70, 72-83, 87-91, 96-121 have been considered but are moot in view of the new ground(s) of rejection.

2. The IDS filed 8 September 2005 has been considered in-part. U.S. Patent numbers have now been considered however references to Foreign and Other Documents have not been considered, as these documents are not readily available to the Examiner. Applicants should submit copies of these references along with a new IDS in the next response to this Office Action.

3. Claims 94 and 95 are objected to because of the following informalities: Claim 94 recites the limitation "semiconducting material" in lines 19 and 20. There is insufficient antecedent basis for this limitation in the claim.

Appropriate correction is required.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein

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were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 65, 66, 69, 70, 72-83, 87-91 and 96-121 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eldridge et al (6482013) in view of Khandros et al (5900738).

Eldridge shows a multi-point probe (Figure 4D) for testing electric properties on a specific location of a test sample, comprising:

- a supporting body (444) defining a first surface; and

- a first multitude of conductive probe arms (450), each of said conductive probe arms defining a proximal end (452) and a distal end (454) and positioned in co-planar relationship (note probe arms 450 are in parallel to the plane surface of support body 444) with said first surface of said supporting body along substantially the entire length of the of the conductive probe arms (note part 456 of probe arms 450 runs "substantially" the entire length of the conductive probe arms), and said conductive probe arms being connected to said supporting body at said proximal ends thereof and having said distal ends freely extending from said supporting body, giving individually flexible motion to said first multitude of conductive probe arms for allowing the distal end to contact the specific location of the test sample (col 15, ln 46 - col 17, ln 50);

said conductive probe arms freely extending from said supporting body in coplanar relationship with the first surface of the supporting body along substantially the entire length of the conductive probe arms as described in claim 65.

Khandros et al shows a second multitude of conductive electrodes (Figure 12; 197) being positioned on second multitude of areas defined on said first surface between the first multitude of conductive probe arms (186), and comprising an insulating spacing (196) between the electrodes and the conductive probe arms, the second multitude of conductive electrodes for active guarding (col 9, ln 59 - col 10, ln 11); as recited in claims 65 and 96. Additionally, Khandros et al shows (embodiment of Figure 3) a third multitude of conductive tip elements (139) extending from the distal end of the first multitude of conductive probe arms as further described in claim 96.

As to claims 66, 69, 70, 72, 73, 76, 82, 83, 91, 97, 104-111 and 120-121, such limitations are considered within the obvious scope of Eldridge et al in view of Khandros et al because both Eldridge et al and Khandros et al teach multiple embodiments of contact structures for interconnections, interposers and semiconductor assemblies.

It would have been obvious to one having ordinary skill at the time the invention was made to have combined the teaching of Khandros et al with that of Eldridge et al because each show contact structures for testing semiconductor devices wherein individual flexible motion of each conductive probe arm is facilitated. Moreover, Eldridge et al mentions (col 3, ln 10-20) improvements to the prior art structures by providing interconnections to terminals separated by fine-pitch distances at uniform pressure to the terminals of semiconductor devices under test.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have further limited the invention as described in claims 74, 75, 77-81, 87-90, 98-103, 109-110 and 112-119 because the limitations demonstrate limiting conditions which can be determined by routine experimentation and are considered to be within the scope of the invention as disclosed in Khandros et al.

Where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. In re Swain et al., 33 C.C.P.A. (Patents) 1250, 156 F. 2d 239, 70 USPQ 412 ; Minnesota Mining and Mfg. Co. v. Coe, 69 App. D.C. 217, 99 F. 2d 986, 38 USPQ 213 ; Allen et al. v. Coe, 77 App. D. C. 324, 135 F. 2d 11, 57 USPQ 136.

7. The following is a statement of reasons for the indication of allowable subject matter:

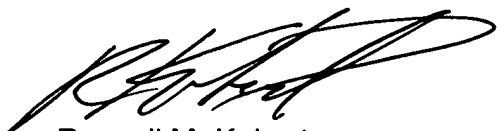
Claims 94 and 95 would be allowable if rewritten or amended to overcome the objection set forth in this Office action.

A multi-point probe comprising a first multitude of conductive probe arms, a second multitude of conductive electrodes positioned on second multitude of areas defined on a first surface between the first multitude of conductive probe arms, a supporting body being of a ceramic material, the semiconducting material comprising at least one of Ge and Si, a first conductive layer positioned on the multitude of conductive probe arms and a second conductive layer acting as the electrodes on the supporting body between the first multitude of conductive probe arms as further described in claim 94 has not been found. It is further noted that the examiner's reasons are understood to be predicated upon consideration of each of the claims as a whole, and not upon any specific elements of the claims.

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Russell Kobert whose telephone number is (571) 272-1963. The Examiner's Supervisor, Nestor R. Ramirez, can be reached at (571) 272-2034. For an automated menu of Tech Center 2800 phone numbers call (571) 272-2800.



Russell M. Kobert
Patent Examiner
Group Art Unit 2829
November 20, 2005



VINH NGUYEN
PRIMARY EXAMINER

A.U. 2829
11/22/05